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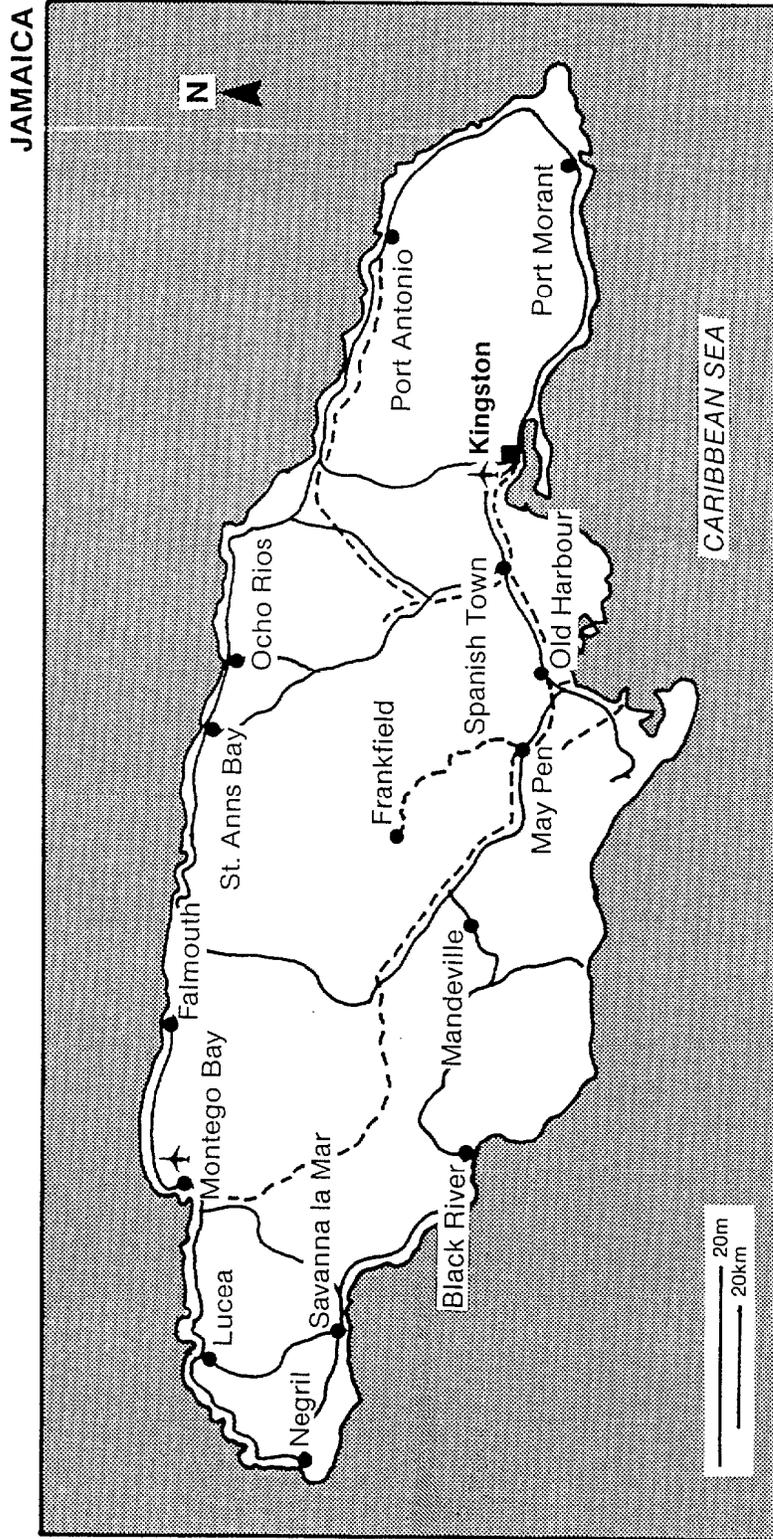
Designing a Sanitation Program  
For the Urban Poor:  
Case Study from Montego Bay, Jamaica

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by  
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and  
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**MAP**



## ABOUT THE AUTHORS

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## ACKNOWLEDGMENTS

This report is based on EHP's experience in planning the sanitation efforts in Montego Bay. The program is still in the implementation stage, as of this writing, and EHP continues to provide technical assistance of varying sorts. The authors relied on personal experience (in the case of Mr. Perez) from visits to Montego Bay and interactions with all of the consultants involved in the planning phase. The text draws heavily on written reports from the consultants who made up the program design team. Without those informative and varied reports written during the planning process, this summary would have been impossible. Those reports are listed in the reference section at the end of this paper.

Our thanks to the whole program design team:

John Austin, environmental engineer (helped lay out the initial design and approach)

Chris McGahey, environmental engineer (conducted the soil samples, assessment of potentially appropriate sanitation solutions, gathered all applicable building requirements and standards)

Janet Hunter, social scientist/community organization specialist (directed and managed the consultant team in the field)

Jean Jackson, communications specialist (directed the focus group interviews)

Fancine Lanar, workshop facilitator (facilitated the December 1994 workshop at the end of the program design phase)



## ACRONYMS

CRDC	Construction Resource and Development Centre
EHP	Environmental Health Project
GOJ	Government of Jamaica
HG	Housing Guaranty (loan program, USAID)
NGO	nongovernmental organization
NRCA	National Resources Conservation Authority
SSU	Sanitation Support Unit
USAID	U.S. Agency for International Development
UNICEF	United Nations Children's Fund
VIDP	ventilated improved double pit latrine
VIP	ventilated improved pit latrine
WASH	Water and Sanitation for Health Project



# 1

## INTRODUCTION

### 1.1 Purpose of This Report

Development organizations have known for many years that improvements in water and sanitation are essential for better health and better life. Millions of dollars have been invested in water and sanitation programs. Yet, far too often, the hopes and expectations for these programs are not met. Repeatedly, the targets or goals for better health are not realized, the beneficiaries do not operate and maintain the new systems as envisioned, or the improvements are ignored after external support is ended. Donors and development specialists have been attempting to find out why this frustration continues, and how to design and introduce improvements that will be in place long after the external assistance is completed. In recent years, USAID, UNICEF, the Sanitation Working Group of the Water Supply and Sanitation Collaborative Council, and others have been researching how to better design and plan programs. At the request of USAID, the Environmental Health Project (EHP) has been focusing particularly on how to improve planning for sanitation, a tougher issue to promote than improved water.

This report provides a case study of the approach and process used to design a specific peri-urban sanitation program. The case study describes technical assistance EHP provided in two communities in the Montego Bay area, Jamaica. The initial assessment and planning activities took place in the latter half of 1994. The sanitation program, which is sponsored by USAID and implemented by a Jamaican

nongovernmental organization (NGO), the Construction Resource and Development Centre or CRDC, has been underway since that time. Results of the implementation of this activity will be documented in a subsequent report.

### 1.2 Characteristics of Peri-Urban Settings

Peri-urban areas often pose unusual and difficult working environments. A 1993 study by the Water and Sanitation for Health (WASH) Project, *The Unique Challenges of Peri-Urban Sanitation* (Technical Report 86), summarizes the characteristics of informal or peri-urban communities. Many pertain to the Montego Bay setting. Often, individuals or families will settle in an area by building shelters from available materials on marginal or undeveloped land, with little or no legal standing. Thus the relationship between residents and local government agencies or services is unclear or even nonexistent. Economic, social, legal, and physical conditions generally found in peri-urban areas present unique challenges to planners attempting to improve community sanitation. Facilities or technologies that are applicable in more favorable terrain may not work on marginal land. And any one solution may not fit all settings, even within a single community.

### 1.3 Neglect of Sanitation

Although it was known as the International Drinking Water Supply and Sanitation Decade, the period from 1981 to 1990 provided far more programming and investment in water supply than in sanitation. During that decade, 1.2 billion persons received access to water compared with the 750 million who gained access to sanitation. While improvements in water supply kept pace with population growth, sanitation improvements did not. Approximately the same number of people lack sanitation today as in 1980. If the estimated rate of investment in sanitation remains constant, by the year 2020, nearly 3 billion persons in developing countries will lack a safe means of excreta disposal. Many of these persons will live in fast-growing, peri-urban slum areas where it is a challenge to find affordable, technically viable solutions to the sanitation problem.

### 1.4 Importance of Sanitation to Health

Available research indicates that more, not less, should be spent on sanitation. Numerous studies have linked improved sanitation to improved health and nutrition, especially among children, and, more important, sanitation has been shown to be a stronger factor in improving child health than water supply (Esrey *et al.* 1990, LaFond 1995).

The lack of sanitation systems and safe hygiene behaviors exposes humans to pathogens and organisms that make them sick. Diarrheal disease, cholera, dysentery, and other gastrointestinal illnesses are caused by contact with pathogens found in human excreta. Diarrheal disease is one of the leading killers of children under five. Recurrent bouts of diarrhea leave young children weak and thereby vulnerable to other infections as well. Diarrheal disease is not limited to young children, however it can

spread throughout a community. As shown in the cholera outbreaks in Central and South America, poor sanitation conditions provide an ideal medium for such epidemics.

If individuals are constantly exposed to fecal pathogens, the provision of clean water will have a marginal effect. Where safe sanitation systems are not universally present and used, all inhabitants of an area are exposed to fecal contamination. Individual households investments in sanitation improvements have little value if neighbors do not maintain safe sanitation practices. Many different avenues of contamination and transmission exist, especially in poor, crowded areas. But various practices can interrupt the transmission routes. Handwashing practices, food preparation routines, food storage and proper cooking, household screens, and other techniques can reduce contact with fecal contamination. The most important place to start is to reduce the presence of fecal matter in the environment.

## **1.5 How This Report Is Organized**

This report consists of five chapters. Chapter 2 discusses common deficiencies of sanitation programs and the principles of successful sanitation program planning. Chapter 3 provides background information on the project area and scope of work. The case study presented in this chapter describes how sanitation planning was conducted in the two project communities and what transpired in the course of preparations for drawing up a sanitation plan. Chapter 4 presents the resulting sanitation program design. Chapter 5 identifies key principles, data needs, and strategies from the sanitation programming process.

## **1.6 Future Report on Implementation Stage**

It is important to note that this case study only covers the **design** stage of the project. The sanitation project is currently still underway with a final evaluation scheduled for the summer or fall of 1997. Early indications are that it is a successful sanitation project. A future case study will describe and analyse in depth the implementation stage of the project and related to the design stage.

# 2

## SUCCESSFUL SANITATION PROGRAMS

### 2.1 Common Deficiencies

A Review of Sanitation Program Evaluations in Developing Countries (La Fond 1995) identified the common deficiencies of sanitation programs. Leading the list is lack of community demand. Communities may not be interested in sanitation, and households may lack incentive to build or buy the materials for sanitation improvements. The genuine self-interest and motivation required to change behavior will come when donors consider community leadership and loyalties, identify community groups and associations, and enlist various supporting organizations (NGOs) to create demand.

Sometimes donors preselect a technology, without considering community preferences or customs. The community often regards such programs as imposed solutions.

Health assessment by the community is a local process. Development planners cannot force health improvements via sanitation programs. How parents, schoolchildren, and other residents view health, illness, and disease causation has a great deal to do with their likelihood of improving their sanitation

practices. Many donors underestimate the time required and value of community activities that lead to successful sanitation programs.

Like all development efforts, sanitation programs need baseline data and monitoring systems to evaluate the outcomes. Gathering data often calls for the collection of information from ministries and agencies such as public health inspectors, housing, construction, and health clinics.

The impact of sanitation programs is hard to measure. Although health statistics are generally the best reference, attributing cause and effect is not always reliable. Health improvements, as seen through reductions in disease, are not always clearly apparent. Reductions in morbidity and mortality of children under five are a classic measure, but new or emerging diseases may have caused other health changes. It has been difficult to quantify health improvements of sanitation programs in low-income areas where multiple factors affect the health of residents especially children. And often it is impossible to disaggregate data for a specific project area from the national or regional health data available.

*The demand for sanitation is often low, and stimulating it takes time and money. Many development institutions are not attuned to demand-led programming, which may explain their unenthusiastic approach to investing in sanitation. Furthermore, key decision-makers are not clear about an overall strategy for sanitation programming, have not reached a consensus on a definition of sanitation, and differ on the optimal role for governments, NGOs, communities, the private sector, and external donors in program implementation.*

(From EHP Activity Report No. 5, *A Review of Sanitation Program Evaluations in Developing Countries*, February 1995)

Effective sanitation programs—

- # use a participatory planning process that involves all institutional stakeholders,
- # stand on their own merit and are not just tacked onto water projects,
- # incorporate educational programs to change hygiene behaviors,
- # fit within a well-understood private and public water and sanitation sector framework,
- # can be expanded without loss of effectiveness or sustainability,
- # respond to consumer demand and willingness to pay,
- # offer a range of technology options,
- # share costs among users and public institutions, and
- # follow sound financial management practices.

(From “Sanitation Programming: Giving Precedence to Process,” Fall 1996 issue of *Environment, Health & People* published by EHP)

## 2.2 Characteristics of Successful Sanitation Programs

The key lesson of the past regarding successful sanitation programming is that technology is only one small part of the water or sanitation improvement process; human behavior and behavior change are the keys to successful programs. Individual behaviors alone cannot make significant changes in the environment; the entire community must be committed. Community participation in sanitation planning is crucial. Another lesson is that it is important to have institutions support and coordinate programs, train and supervise health workers, and provide health education programs. Construction, maintenance of systems, financing systems, and enforcement of municipal regulations may all be handled by different public and private agencies. For a successful and sustained program, all of the potentially involved agencies must be included in the planning

process. The accompanying text box enumerates the keys to a successful sanitation program.

The following program activities are required for the application of these principles.

- # Gaining maximum participation of the community in program planning, implementation, operation, and maintenance. This is important for generating demand, financing activities, designing program strategies and plans, stimulating behavioral change, choosing technologies, and developing maintenance strategies.
- # Using mechanisms to measure consumer demand as the basis for designing program strategies and plans.
- # Incorporating capacity building of groups at all levels of the system.
- # Selecting a technology based on local preferences, the differences in the ability and willingness to pay among community

groups, capital and recurrent cost tradeoffs, availability of local building materials, and operation and maintenance requirements.

- # Promoting behavioral change through information and education.
- # Identifying a strong central agency to implement a devolved program that plans, manages, and evaluates sanitation activities. It would eventually change from being a direct provider of services to taking responsibility for promotion, regulation, training, advocacy, and facilitation.
- # Establishing and supporting a cadre of sanitation workers.
- # Placing sanitation program strategies in the context of external economic, political, and institutional factors.
- # Exploring the comparative advantages of public and private for-profit and nonprofit agencies in sanitation programming.
- # Developing appropriate financing mechanisms.
- # Promoting financial sustainability through cost-effective technologies and management approaches, community management, community financing and cost sharing, standardization of equipment, increased utilization of the private sector, and improved monitoring and evaluation.
- # Promoting change in hygiene beliefs and practices.

Operational guidelines to adhere to when planning and carrying out essential program activities are summarized in the accompanying text box.

These basic principles and approaches were used in designing the Jamaica program. These points, however, do not provide a cookbook approach each setting presents its own conditions.

### ***Guidelines for Designing an Effective Sanitation Program***

#### ***General***

- # Design and implement programs in response to local needs and conditions.
- # Use local people and local solutions.
- # Avoid blueprints of project designs.

#### ***Technology Choice***

- # Consider local solutions before introducing new technology.
- # Respect consumer design preferences.
- # Assess consumer willingness to pay.
- # Do not underestimate the need for generating demand for different technologies.

#### ***Behavioral Change***

- # Assess sanitation beliefs and practices as the basis for planning.
- # Identify behaviors to be changed.
- # Maximize the impact of health education by
  - using participatory techniques
  - targeting women and children
  - using women facilitators

#### ***Capacity Building***

- # Establish indicators at the outset.
- # Gather necessary baseline data.
- # Involve consumers in evaluations.

# 3

## **SANITATION PROGRAMMING**

### **3.1 The Urban Upgrading Project in Norwood and Rosemont**

Jamaica's urban areas are growing with informal settlements on the outskirts of developed towns like Montego Bay, a city on the northwest coast of the island. With provision of USAID HG (Housing Guaranty) loan funds, the Government of Jamaica (GOJ) has been upgrading the Norwood and Rosemont communities of the informally settled area on the outskirts of Montego Bay. (The sections of Rosemont which are involved are known as Rose Heights.)

Characteristic of many informal settlements, these areas have been inhabited by residents who took over the land, built houses, improved them over the years, and established themselves in what have become permanent communities. Among the improvements planned in the upgrade program are piped water to house lots, roads and retaining walls, storm drainage, and electricity. Household holders would be expected to pay for these improvements via a loan program, and in return would receive legal title to the houseplots.

Once water is provided to each house lot, more water would be used, and more wastewater produced. Runoff from the hillsides of Norwood and Rosemont would increase. More families would install flush toilets in a desire to upgrade their sanitation systems. If the land could not support on-site disposal systems, or if improperly managed sanitation systems were installed, increased runoff could contribute to the damage of the coral beds and Bay area in general. For this

reason, USAID commissioned an assessment of local conditions and recommendations for ways to promote suitable sanitation systems for the two communities.

In 1994, USAID received the results of this assessment, which recommended sealed-vault ventilated improved double-pit (VIDP) dry latrines for all house plots. The problem with this assessment was that the community had not been thoroughly consulted about this choice of technology, and the system did not appear to be consistent with local demand or practices. Nor did the VIDP appear to be the only viable system ecologically or financially. Some families were able and willing to pay for a more sophisticated system. USAID staff believed the plan did not include several other necessary components such as a financial plan, involvement of the community in examining the issues, and identification of an implementing agency. At this juncture technical assistance was requested to complete the design and initiate start-up of a program of support for the installation and maintenance of appropriate excreta and graywater disposal solutions in the project areas of Norwood and Rosemont in Montego Bay. The following section summarizes the scope of work.

### **3.2 The Sanitation Program Design Tasks**

An interdisciplinary team of Jamaican and U.S. consultants, consisting of a social worker/ community participation specialist, a civil engineer, an environmental engineer, a

research analyst, and a workshop facilitator, were brought together to design the Montego Bay urban environmental sanitation program. The design team's tasks were as follows:

- # Identify a range of on-site sanitation and greywater solutions appropriate for the Norwood and Rosemont project sites and eligible for HG loan financing.
- # Develop criteria and guidelines for deciding whether or not an existing on-plot sanitation solution is acceptable under the program, and design and help coordinate a house-to-house sanitation survey.
- # Look into unresolved issues involving all relevant agencies. The USAID/Jamaica on-plot sanitation project officer directed the effort to reach concurrence with the appropriate GOJ agencies on key project design elements that had to be resolved before the sanitation program could begin.
- # Engage and involve the communities of Rosemont and Norwood in the final design of the program.
- # Set realistic project targets and indicators for future monitoring efforts.
- # Collect and document necessary construction-market-related information.
- # Plan and facilitate a workshop for all stakeholders to clarify roles and responsibilities and to prepare a work plan.
- # Identify and cost out the procurement needs for the sanitation program.
- # Develop a scope of work and budget for the NGO and/or GOJ agency to implement the project.
- # Describe technical assistance needs.

### **3.3 Implementing the Design Tasks**

As explained above, the interdisciplinary team was to complete the design for a wastewater

and excreta disposal in the project communities of Norwood and Rosemont. This section reviews the steps taken, although this sequence does not give a strictly chronological picture. All activities were completed in three months, from September to December 1994.

The design efforts had three main prongs:

- # Geological/soil studies: What could the physical setting support
- # Citizen involvement: What were the residents' concerns, what was important to the community, what type of sanitation systems did they want, and what would they pay for
- # Identification of a local implementing agency: Who would help residents select a sanitation system, and who would assure the householders of adequate workmanship, to warrant issuance of land title

#### **3.3.1 Initial Assessment**

One of the first jobs of the design team was to figure out who all the stakeholders were and who should be included in the design and implementation process. In the initial assessment visit in September 1994, a two-person team traveled to Jamaica and identified the following major organizations likely to be involved in the upcoming activity. USAID/Jamaica was administering HG loans for housing improvements and overseeing the whole upgrade effort. The Ministry of Construction (now the Ministry of Environment and Housing) was involved in the distribution of HG funds. The National Housing Corporation was the implementing division for the upgrade effort. The National Water Commission was responsible for water hook-up and water metering. The Caribbean Housing Finance Corporation was to distribute the HG funds and set mortgage rates. Local banks and credit unions would manage the loans. The Ministry of Health was

responsible for health worker training and development of health messages for communities, as well as final acceptance of installed sanitation systems from a public health point of view. Potentially, the Jamaica Public Service Corporation and National Resources Conservation Authority would have a voice. One of the tasks of the initial assessment was to meet with representatives of these organizations in order to identify their concerns relative to the project.

On this trip, the team also began the process of finding an individual to be the on-site (Jamaican) coordinator for the start-up phase of the project. A consultant with time available and the requisite social science/project management skills was located, and negotiations began regarding her potential to coordinate the start-up activities. In addition, the team held preliminary discussions with a local NGO about the possibility of implementing the project i.e., advising homeowners about suitable options and providing technical guidance in the future.

### **3.3.2 Program Design Tasks**

#### ***Identify a range of on-site sanitation and graywater solutions appropriate for the project sites and eligible for HG loan financing***

First, it was important to discover what studies had already been done and what the physical characteristics of the project area were. An environmental engineer reviewed that documents described previous studies in the area focussing on surface and subsurface soil conditions. Following that, an assessment was needed to decide what options fit the terrain and circumstances of households in Norwood and Rosemont.

Two previous studies (1988 and 1989) indicated that varied soil conditions existed, which meant that some areas could support absorption pits, while others called for non-

water-borne systems. The most recent study, conducted in 1994, concluded that VIDP latrines would be the best technology for all sites. The environmental engineer thought that given the demonstrated suitability of existing soil to accept wastewater, it was more appropriate to identify a range of appropriate technologies based on soil conditions. He conducted soil studies in the communities and looked at other areas in Jamaica undergoing upgrade activities. Given the success of various on-site sanitation systems elsewhere, he recommended several alternatives which basically fell into two categories systems that require soil absorption and systems for locations where soil absorption is not possible. Some of the sanitation options were already in use in the Norwood/Rose Heights area others had not been tried. His report included construction issues, maintenance and upkeep for each option, equipment and supplies required, and costs. In completing his work, the engineer consulted GOJ and private-sector engineers and others on current best practices. The following were identified as feasible technology options:

- # Ventilated, improved pit (VIP) latrines
- # Single pour-flush pit latrines
- # Double pour-flush pit latrines
- # Tank-flush with absorption pit
- # Tank-flush with septic tank with soakaway
- # Tank-flush with septic tank and trenches or tile field
- # Ventilated, improved double-vault pit (VIDP) latrines
- # Vault latrines and suction tanker collection
- # Small-bore, decentralized water-borne sewer systems

***Develop criteria and guidelines for deciding whether or not an existing on-plot sanitation solution is acceptable under the program and design and help coordinate a house-to-house survey***

### *Develop Criteria and Guidelines*

The environmental engineer met with relevant national agencies and gathered together all Jamaican regulations, laws, and standards that pertained to wastewater and sanitation. The engineer prepared a list of minimum criteria for acceptable sanitation systems with the concurrence of all relevant institutions. Certain basic standards applied to all systems they must protect residents health and the environment. In addition, specific criteria were set for certain options, i.e., absorption pits and soakaways.

Any on-plot sanitation system also had to suit the economic level of the household. The consultant recommended that, since households in Norwood/Rosemont had quite diverse income levels, a choice of sanitation options in each price range be provided.

The criteria also addressed inspection and approval/rejection issues. Although some households needed new sanitation systems, many others appeared to have satisfactory systems in place. The consultant's report recommended that a house-to-house survey be conducted by a public health inspector from the Ministry of Health and a representative of the to-be-identified implementing agency. Each house should be surveyed, and those with systems meeting acceptable standards should be certified by the inspector as required by existing regulations.

### *Design and Help Coordinate a House-to-House Sanitation Survey*

The initial community-wide activity in this planning assignment was to inventory existing sanitation facilities in the two communities. The program design team leader designed an inventory form (see Annex 1), and the chief public health inspector, the medical officer of St. James Parish, the director of NRCA, USAID, and others reviewed it. Initially, the form was to gather household information on

preferences, family use of the facility, and problems encountered, as well as to identify the existing system. But the opinion and usage portion was later separated, and those topics were investigated in focus group meetings. The house-to-house inventory became solely a physical survey of the existing facilities. Initially, the public health inspectors were to conduct the inventory. This arrangement did not work out well, and local community animators, who had been trained by UNICEF, were hired to do the job. The inventory reported on 1,556 plots (about 10 of the total households in the project area) in November 1994.

The inventory found that 42 of the lots surveyed presently had water-borne sanitation facilities (flush or pour-flush toilets), which emptied into a variety of disposal systems (septic tank, absorption pit, sink hole, gully, or road drain). It was also found that 40 of the plotters used a latrine, and 19 were without any sanitation system.

### *Look into unresolved issues involving other agencies*

The program design team addressed unresolved programming issues. Some of the issues related to who would be the inspecting agency and who would ensure that the systems were sound, suitable for the site, and used properly. Jamaican regulations and statutes, which the environmental engineer listed in the report, dictated some of these answers. By law, public health inspectors have responsibility for inspecting sanitation systems and assuring compliance.

Another issue to address was how to bring the implementing agency for the program into a working relationship with the public health inspector system. Issues of inspection, enforcement, and compliance began with the household survey of 10 of the homes in the planning period, i.e., finding out what existing systems were. A plan for a plot-by-plot inspection of all houses in the

project areas was then drawn up. The complete inventory of all homes was to be undertaken later during program implementation.

Another set of issues identified by the design team related to financing. How would the HG loans be administered? Who would disburse funds, and who would ensure sound construction and compliance with local laws? Would the sale prices fit with household budgets? These financing issues were explored through the three-month planning period and were still being discussed at the meeting of stakeholders in December 1994. It was clear that the financial mechanism had to be suitable for householders, USAID, the housing authority handling HG funds, and the implementing agency. Final details were settled in the year following the planning period. But the issue remained on the radar screen.

The issues raised were addressed throughout the planning stage. The environmental engineer listed issues that had to be addressed for successful implementation. (These were core factors in drawing up criteria and guidelines.) Issues that remained outstanding were delineated at the December 1994 meeting, with an analysis of which organizations had authority over each area, and what the follow-on actions should be. (This list is found in Annex 2.) Stakeholders discussed what (public) agencies were involved, as regulatory, approving, or setting criteria. This meeting resulted in agreements among all parties as to who would participate in the project. It also set the agreed terms on what would be expected of the implementing organization. Common understandings and ground rules were set for working with the implementing organization.

The program design team drafted a critical-path flow chart of actions and decisions that needed to be made with estimated dates. This flow chart was monitored and revised as needed throughout

the activity. USAID/Jamaica was responsible for getting the GOJ to take necessary actions and make the needed decisions.

Although not all questions were answered in the planning period, all aspects of the program implementation were considered. Many of the issues took longer than three months to resolve.

### ***Engage and involve the communities in the final design of the program***

Primary players in development activities are residents of the community. The absence of community involvement in the earlier planning process was a glaring omission. When the project was designed, the first step was to ascertain the existing situation. Community meetings were set up, and key interviews were held. Drawing on the community for its ideas and assessment of current conditions and priorities are central to good planning.

During the fall of 1994, Jamaican researchers from the University of the West Indies set up the planning for a series of focus group meetings. Recruitment for the focus groups was conducted by a trained cadre of community members, who were guided in techniques for engaging and committing residents to attend. Focus groups consisted of men and women of various socioeconomic groups to ensure representation of the whole community. Eight focus group meetings were held, and each group contained 9 to 14 individuals. The groups focused on a set of questions and discussion topics. In addition, nine key interviews were held to discuss issues in greater depth. Discussions were led by trained moderators. This process used local leadership skills, and built on connections that will be further strengthened in the course of the project.

Ascertaining community demand was the major purpose of the focus group meetings. Residents understood the link between sanitation practices (and waste disposal in

general) and health. Poor practices endangering everyone's health were common concerns. Child safety (children falling in to the pits) was also identified as a major concern of the community. Of less concern to residents was the practice of disposing of excreta via a pipe running into a sink hole or sea ball. The need to educate Residents on the effects of runoff and pollution were identified. Also, there was a perception that the VIDP was for lower status families a water flush toilet was preferable, if a family could afford it. Water-borne systems have higher status, appear more modern, and take the problem away. Because, in some cases, the VIDP latrine may be the better choice due to soil and groundwater conditions, more education is needed on the efficacy of the VIDP system.

### ***Set realistic project targets and indicators for future monitoring efforts***

In the planning period, project targets were set in terms of goals for the implementing agency. From past experience, the program design team knew that the number of systems installed does not accurately reflect sanitation improvements. Public awareness, acceptance of sanitation solutions, improvement of public health, and abatement of environmental pollution all need to be considered. One of the products of the technical assistance provided in the planning phase was delineation of project targets in programmatic rather than numerical terms. These were to be reasonable, realistic, and acceptable.

The goal during the planning phase was to set the stage for a local organization to provide useful and authoritative guidance to the communities regarding household sanitation facilities. The program design team designed a series of targets and indicators that would describe establishment of a steady organization, with clear lines of authority from the Ministry of Health, adequate office

support and equipment, and a fee structure that community members could afford for professional services and advice.

The targets were phased (one-month, three-month, one-year targets) to realistically assess organization's progress in building a solid foundation. The organization's role in the community was planned to be long term. By using Montego Bay as the training ground, its services could be applied in many other Jamaican settings.

Targets for the first month included setting up arrangements with the Ministry of Health for approving and documenting selection procedures for sanitation systems. In the first month, a financial mechanism had to be established for plottolders to pay for construction of sanitation systems. The implementing organization had to establish a fee for its services, to demonstrate the ability to be self-sustaining over time.

By the end of the third month, the organization was to start conducting a public education program. At this time, the organization was also to have in place a plan to monitor changes in health status and attitudes of residents in the two communities. By using the house-to-house survey, the organization was to help those households with acceptable sanitation facilities move toward obtaining title to their plots. (In other words, the implementing organization, at this point, was to serve as a facilitator of information between and among Jamaican authorities to legalize the plots.)

By the end of six months, the implementing organization was to be able to demonstrate (to USAID or Ministry of Health) that new or improved sanitation systems had been financed and built, and were being properly used. The program being established in Norwood/Rosemont was to be ready to use in other parts of Jamaica.

By the end of 12 months, it was anticipated that the implementing agency would have assisted residents in selecting and installing safe sanitation systems. At the end

of 18 months, the agency was to be able to demonstrate the health benefits of those systems via various forms of data. Several examples of data to illustrate health improvements were offered in the design team's report. The targets were intended to measure the establishment of a solid organization that would be able to give reliable and useful information to community members and engage in continuing public education efforts to improve and maintain a safe and healthier environment.

***Collect and document necessary construction-market-related information***

In carrying out the first task (identify a range of on-site sanitation and graywater solutions), the environmental engineer surveyed the local market for construction materials, suppliers, prices, and labor resources available to the communities. He prepared an extensive summary, which included sources of construction materials, prices, expected delivery time, possible places for delivery of materials, transportation costs, and the possibility of entering into tendered agreements with local merchants or manufacturers.

With this survey of local construction services and materials, the implementing organization was able to outline training needed in construction techniques to ensure the integrity of the sanitation systems built. Assisting householders in selecting affordable sanitation systems required a knowledge of building costs and available services and materials. The consultant's report helped in this process.

***Plan and facilitate a workshop for all stakeholders to clarify roles and responsibilities and to prepare a work plan***

The final step in this initial planning period was a one-day workshop to bring together all the stakeholders involved in the sanitation

program. This workshop was designed and implemented by a skilled workshop facilitator. In preparation, the facilitator toured the communities and visited homes to see the existing sanitation systems. This visit provided a sense of the setting and the types of issues confronting residents' helpful background material for focusing discussions at the workshop.

In addition, a six-page background document was prepared by the USAID officer and distributed to all participants before the workshop. He also compiled a list of outstanding issues, organizations involved, and actions needed. This matrix (see Annex 3) guided discussions at the workshop.

Twenty people attended the workshop. Attendees included USAID representatives, EHP consultants who had worked on the planning steps, Jamaican staff from the Ministries of Construction (housing) and Health, the director of the Caribbean Housing Finance Corporation, the executive director of the NGO Construction Resource and Development Centre, and others. Although they had previously been contacted regarding the project, the workshop provided an opportunity for them to work together to work out next steps and responsible parties.

Many issues were brought up during the planning period, but not all of them were settled by December 1994. In particular, the financing mechanism how the loan funds would be disbursed had yet to be decided. One of the major outputs of the workshop was a delineation of outstanding issues and assignment of responsibility for the next action steps. The facilitator's report covers the issues discussed and agreements reached on next steps.

### ***Identify and cost out the procurement needs for the sanitation program***

One of the items prepared by the program design team was a detailed scope of work for the implementing organization (discussed in the next section). In preparing the outline of work, a draft budget of costs to run the organization for 18 months was developed. The major components were personnel continuing costs, such as rent, utilities, travel costs, and office supplies and equipment. Equipment purchases that were anticipated as necessary included standard office equipment (furniture and computer equipment), telephones, library supplies, and modest transportation equipment. All of these items were included in the budget for the implementing agency.

### ***Develop a program design and budget for the NGO and/or GOJ Agency to implement the project***

A detailed scope of work and budget were developed for an implementing organization. The program design team concluded that, rather than using civil servants from the Ministry of Health, a well-established, capable, Jamaican NGO would be the optimal choice to implement the proposed sanitation program. The rationale behind this choice was that an NGO could manage a team on a more flexible basis cope with nighttime, weekend, and holiday working hours and generate a sustainable and expandable organization.

The implementing organization would provide advice and information to community members, while the certification of acceptable sanitation systems, the mortgaging and financing aspects, and the issuance of titles would remain the responsibility of governmental agencies. The implementing agency would steer householders in their selection of sanitation systems and be an information clearinghouse regarding costs, building materials, and workmanship. Inspection of renovated or newly installed systems would be a shared responsibility of the NGO and public health inspectors (who would protect householders from shoddy workmanship while protecting the public health).

Sanitation deficiencies in these Montego Bay neighborhoods are not unique. Other areas in Jamaica could benefit by capable leadership in community health education, construction and cost advice, and broader awareness of the environmental effects of poor sanitation practices. EHP has studied the issues around diarrheal disease, sanitation planning and funding, and the relatively low success rate of many sanitation programs. Two characteristics stand out as organizational requirements for success:

- # A strong human resource base: community health workers, community animators, and development workers who can address the issues of public education and inspection/standards
- # Financial self-sufficiency of the organization (no dependence on outside funding)
- # Developing standardized design and materials lists
- # Collecting data on alternate sanitation systems that have been successfully used in other peri-urban areas in Jamaica
- # Developing an ongoing monitoring and improvement system

These two elements were emphasized in the scope of work for the implementing organization, which called for staffing with community service agents to educate, publicize, and advise. These services would not be free. Although the initial start-up costs (the first 18 months of operation) would be funded by USAID, the goal was to have a well-recognized agency that could expand its operations (after demonstrated success in Norwood/Rosemont) to other communities in Jamaica.

#### ***Describe technical assistance needs***

The program design team identified several potential areas for technical assistance during the implementation phase of the sanitation project. The items listed could help a newly formed organization move ahead rapidly, assist with the development of training materials or a management information system, conduct a project start-up workshop, or collect needed information on health conditions. With a certain amount of outside assistance, a fledgling organization could avoid getting stalled early in its program. The timing and pace of early steps in a program can have a make-or-break impact.

The program design team's recommendation was to provide short-term technical assistance in several of the areas listed, including the following:

- # Designing an information system to track information on all house plots in Norwood and Rosemont

- # Developing a management information system
- # Developing a health-related behavior change program
- # Developing institutional management systems

# 4

## DESCRIPTION OF PROGRAM DESIGN IN URBAN

As mentioned in Chapter 3, although not every issue was settled definitively in the three-month design period, the points mentioned as characteristic of effective sanitation programs, as noted in Section 2.2, were all addressed. The final Jamaica project design focussed solely on facilitating provision of high quality sanitary facilities. Community development specialists would introduce educational messages and identify high risk hygiene behaviors from the day the program began. While the regulatory and policy framework was fluid, the project was designed to operate outside of governmental agencies yet continuously promote their involvement. It was also designed to present to the population a range of technological options from which they could select based upon personal preferences and/or willingness to pay. The local organization was set up with a fee-for-service structure to ensure financial sustainability. Finally, the entire process was to be managed in a way that met USAID's accounting procedures and regular audits by an external accounting firm selected by USAID.

Many issues touched on in the three-month design period led to deeper involvement in the future. For example, health assessment, health worker training, promotion of health issues, and behavior monitoring became key subjects as the project matured. The development of follow-on activities, in any program, will be shaped by local needs and local demand. The design phase should not dictate what avenues will most need attention or support. It is important, however, to consider all the

diverse facets of sanitation programs. The following is a complete description of the sanitation program that was designed.

### 4.1 Purpose of the Urban Sanitation Project

The intent of the project was to facilitate the construction of sanitation systems to serve two undeveloped peri-urban settlements. The program aimed to improve the health of the population of each settlement without adversely impacting the environment. Transferable expertise would be developed, and the methodologies employed by the implementing organization would be documented for use in other similar settings in Jamaica and other parts of the world. The basis of the design of the program was to facilitate the use of public, private, and independent contributors to achieve the overall objectives. To achieve this, USAID provided funds to a local NGO to establish an arm, called the Sustainable Sanitation Support Unit, capable of facilitating the installation of safe sanitation solutions in informal and other settlements throughout Jamaica, using the Rose Heights and Norwood areas of Montego Bay as models.

### 4.2 Program Description

#### 4.2.1 Overview

To begin the effort, the Jamaican NGO, Construction Resource and Development Centre (CRDC), would set up an office near

the two target communities. By assisting with design, information, financing, and official certification, the unit would support households in constructing excreta disposal systems that met environmental and public health standards as well as the households preferences. At the end of the project, a sustainable Sanitation Support Unit (SSU), capable of replicating the facilitation of the sanitation solutions delivered to the Montego Bay area, would be in place.

The principal role of CRDC/SSU would be to act as the liaison among the plottolders, representatives of the Ministry of Health, and the institutions that could issue the mortgages to the plottolders. CRDC/SSU would not interfere in the activities undertaken by the existing private and public sector actors, but rather it would interact with them to enable plottolders to acquire excreta disposal systems that met environmental and public health requirements of all authorizing agencies.

CRDC/SSU's long-term goal was to establish itself as a national center of sanitation expertise. In this capacity, it would be capable of providing technical advice and assistance to communities and institutions working in the sector and would constitute a focal point for professionals working in this field. Given the common problems faced by many countries in the Caribbean region, the implementing agency could well become a regional resource.

The intent of CRDC/SSU was not to be directly involved in the on-site installation of excreta disposal systems. Rather, it would facilitate the implementation of the program by ensuring the communities, the private sector, and the public sector, allowing each to perform the activities it was best suited to carry out. CRDC/SSU would facilitate action by providing technical assistance, training programs, contact referral, and overall program direction.

CRDC/SSU, if requested, would directly assist the plotholder by explaining the

procedure that she or he must follow to obtain title to land, identifying and contacting appropriate artisans and labor to install appropriate excreta disposal systems, and arranging for certification of the design and installation of the excreta disposal systems. Construction contracts, however, would be drawn up between the builder and the plotholder.

A principal goal of CRDC/SSU would be to insure the sustainability of its strategy and operations beyond the period funded by the initial grant. Excreta disposal systems would be completely financed by the plottolders, independent of CRDC/SSU. SSU would recover its costs and maintain viability by charging plottolders a set fee for access to its services. Plottolders would select a system from a range of technologies designed to preserve public health and the environment while accommodating their individual desires and finances.

#### **4.2.2 Specific Activities**

The major tasks of this program were proposed as follows:

- # Project initiation
  - CRDC would establish facilities near the two target communities for the SSU.
  - CRDC would procure equipment and materials necessary for the project.
  - Eleven staff members would be hired and trained.
  - CRDC and the SSU staff would collect material for and organize a dissemination center to assist communities and agencies in choosing and implementing good practice in sanitation. Designs, pricing information, and educational material on public health, the environment, and good construction practice would be made available.

- CRDC and SSU staff would establish a library to enable the SSU to be a national and regional resource center for sanitation expertise. The library was to collect relevant work regionally and worldwide, including laws, acts, regulations, development plans, geological maps, and site investigations.

#### # Promotion

#### # Training

- CRDC and SSU staff would develop curricula and arrange training workshops for community members about good practice in the areas of construction, use, and maintenance of sanitation and greywater disposal solutions, as well as other areas found necessary, such as the local mortgage procedure.
- CRDC and SSU staff would train community health aides and community health workers to train persons from the community as animators. These and community leaders would be assisted to create sanitation and environmental awareness programs in their communities.
- CRDC and SSU staff would establish a training curriculum for public health inspectors of the Ministry of Health to upgrade their skills in areas such as sanitation options, map reading, soil examination and testing, and facility maintenance skills.
- CRDC and SSU staff would develop and run training courses for contractors, builders, and tradesmen. These courses would cover the suitability, siting, construction, and maintenance of a variety of disposal technologies. As part of the function of the unit, training would be available to persons from other communities and areas in Jamaica.

- The SSU would identify, liaise with, and make use of other resources available in the parish of St. James, such as community animators (UNICEF), community health workers and aides, community development workers, and other public health workers.
- The SSU would establish demonstration areas in the communities, with the necessary training to create an understanding of the issues. These demonstration areas were intended to be used to assist in propagating the ideas and organizational forms to other areas.
- Based on material produced by previous work on VIDPs in the project areas, the SSU would develop additional information and organize a public education program that would present a range of options offering acceptable sanitation solutions to the project communities.
- CRDC and SSU staff would develop social marketing tools to use to promote good sanitation practice in the project and other communities. These could include videos, published material, and community animation material.

#### # Coordination

- CRDC and SSU staff would be responsible for obtaining technical assistance to deal with design problems beyond the capabilities of the unit staff. Approval would have to be sought from the local inspectorate and if necessary from the Environmental Control Division of the Ministry of Health.
- CRDC and SSU staff were intended to work with the Ministry of Health to establish a mechanism for the approval, documentation, and coordination with other authorities as necessary to produce sanitation

solutions acceptable to environmental, groundwater, and public health authorities.

- It was necessary for CRDC and SSU staff to cooperate with the local financial institution that would be supporting the sanitation solutions. Technical staff from the SSU would assist with design and inspection of individual solutions, arrange for the certification of the design by the relevant government official, approve the release of funds on completion of safe construction, and arrange for inspection and certification of the completed facility by the relevant government official. The SSU would then report to the financial institution on completion of the facility to ensure that the plot mortgage was adjusted to incorporate the sanitation loan. Existing financial organizations would handle all accounting and manage all funds.

#### # Technology options

- The SSU would provide a selection of excreta disposal systems to the plottolders to meet their financial means, personal preferences, and geological conditions of their plot, as well as public health and environmental requirements. Technical assistance, cost estimates, construction supervision, and arrangement of official certification would then be offered as a service to enable plottolders to obtain a suitable sanitation solution.
- Throughout the life of the project, CRDC and SSU staff would continue to review, develop, and document technologies, such as condominal sewer systems, that could produce viable alternative sanitation solutions. The monitoring, training, operation, and maintenance requirements to satisfy the relevant government

authorities would need to be established.

- # Sustainability of the program
  - The SSU was designed to operate on a fee structure for the services provided under the project and charge the plottolders as part of their sanitation loan.
  - CRDC and SSU staff would continually investigate other potential sources of support for community sanitation initiatives from government ministries, agencies, and programs multilateral and bilateral donors and the private sector.

examination, and maintenance, for public health inspectors and siting, suitability, construction, and maintenance of various sanitation solutions, for contractors, builders, and tradesmen from the target and other communities.

- # Promotion
  - A public education campaign has been developed to introduce the program to

### **4.2.3 Performance Indicators**

Performance indicators were selected to follow the main objectives the indicators were intentionally programmatic rather than numerical:

- # Project initiation
  - A functioning office, including staff and equipment, has been established in the Montego Bay area.
  - All staff are oriented and trained to carry out their functions.
  - A dissemination center is operational and the collection of relevant material for the library has been initiated.
  - An external agency has been designated to monitor and document the experiences for dissemination abroad.
  - Survey data has been collected to show the program s health benefits.
- # Training

Curricula for training courses have been produced and various courses offered. Courses are to include good practices in sanitation solution and construction, for the project communities community animation, for the community health aides and community health workers sanitation options, map reading, soil

the target community and the relevant government officials.

- The dissemination center has been established to promote the installation of safe sanitation solutions in the target communities.
- Demonstration areas has been established in the two communities.
- Social marketing tools has been developed and used in the target communities.

# Coordination

A method of approving, documenting, and communicating the successful design and construction of safe sanitation solutions to the relevant authorities is in place.

# Technology options

The project has developed a range of sanitation options and their criteria for use, together with cost data to assist with choice.

# Sustainability of the program

A fee system is established to recover program operating costs.

# 5

## DESIGNING A SANITATION PROGRAM SUMMARY AND KEY PRINCIPLES FOR FOR THE URBAN POOR

This final chapter summarizes the key principles identified in this document, the key questions to ask and information to gather in planning and designing peri-urban sanitation projects, and the basic approaches that should be considered when devising project strategies for improving community excreta sanitation in peri-urban areas.

### 5.1 Key Principles

- # Improving the health of the rapidly growing number of families living in peri-urban areas and protecting the urban environment are urgent needs and compelling program objectives that host country governments, as well as external support agencies such as USAID, must address. In reaching these objectives, improving community sanitation should be accorded the same (if not higher) priority as water supply.
- # To improve health in densely populated peri-urban areas, sanitation programs must target the community rather than individual households. Individual households with improved sanitation will not experience improved health if their neighbors dispose of fecal matter in ways that contaminate the general environment of a peri-urban settlement. In addition, improved community excreta sanitation may not improve health if other environmental factors such as solid waste disposal and drainage are not also considered.
- # The current planning paradigm for formal urbanization, which begins with the installation of basic urban services, does not coincide with the actual peri-urbanization process, which begins with the informal and/or illegal settlement by poor urban families on land that has not been urbanized. The peri-urbanization process is a reality for 50 to 80% of most cities in developing countries. Therefore, authorities must recognize that providing sanitation services to existing densely populated peri-urban settlements must follow a different paradigm than that of traditional urbanization. Additionally, officials must acknowledge the need to reform existing service provision agencies to coincide with the particular needs of the peri-urban sector.
- # The economic, social, legal, and physical conditions generally found in peri-urban areas present unique challenges to water supply and sanitation sector specialists attempting to improve community sanitation. In large measure, conventional engineering approaches and standard technical solutions used for formal urban sewerage systems must be significantly modified or even rejected for peri-urban areas.
- # Installing a sanitation technology can be done relatively rapidly. Setting up and implementing a long-term sustainable peri-urban sanitation program that successfully improves community health and protects the environment takes significantly more time.
- # To improve health, changing individual and community behaviors that cause fecal-oral contamination is at least as important as constructing new sanitation facilities. For efforts to change behavior to succeed, projects must be designed around a thorough and correct understanding of existing knowledge and hygiene practices in the community and a thorough knowledge of the social, cultural, and religious context in

which high-risk behavior takes place. Moreover, efforts to change behavior must be institutionalized and enjoy strong support from donors, governments, and other key actors.

- # Recognizing that improving peri-urban community sanitation is a complex process, project planning should involve the many institutional actors that influence or have responsibility for peri-urban sanitation, including the respective agencies that handle sanitation; the agencies responsible for hygiene education; and non-health agencies such as municipalities, urban planning agencies, and credit institutions. The most effective way to ensure that cooperation is elicited from the widest possible range of agencies and institutions is to take an inclusive, participatory approach to the planning process.
- # Peri-urban sanitation projects should not be solely technology driven. Successful sanitation interventions should also consider health, economics, social, legal, and institutional factors.
- # The conceptualization, design, and construction of peri-urban sanitation systems pose extremely complicated engineering challenges that require skilled, experienced, and innovative engineers working on interdisciplinary teams along with planners, social scientists, environmentalists, lawyers, economists, and others.
- # Citizen involvement and community participation are critical to successful peri-urban sanitation programs. Community participation can lead to initial cost reductions, easier and faster installation of technologies, increased acceptance of program interventions, increased cost recovery, and more effective operation and maintenance.
- # Institutions providing peri-urban sanitation services should seek to recover as much of their costs as possible in order to reach some level of financial sustainability and be able to expand services to other peri-urban areas.

Individual households should be expected to pay for the real value of the sanitation services. Providing access to credit can greatly facilitate people's ability to pay for the services. If subsidies are necessary to reach the extremely poor, they should be clearly accounted for. Successful cost recovery results from providing services that families want and are able and willing to pay for and from developing effective institutional capacities to collect tariffs, loan payments, and other fees.

## 5.2 Data Needs

Clarifying and understanding the problems peculiar to peri-urban environments is an essential first step in the design and planning of a peri-urban sanitation project. Much of the data needed to better understand these problems may not currently exist, and gathering it will require a significant effort on the project planner's part. Required data include answers to the following questions:

- # What are the current environmental sanitation conditions in the targeted peri-urban areas? What percentage of the community currently has access to sanitation as well as to other related basic services such as water supply, drainage, solid waste collection, and so on? What are the nature and quality of the existing services (for example, pit latrines and septic tanks)? Is the water supply reliable? Is it at the household level, at public standpipes, or through private vendors selling by the bucketful?
- # What are the high-risk behaviors of the families—especially the children—living in these communities? Are the highest-risk health problems related to inadequate environmental sanitation? How would the families prefer to behave? What behaviors would they like to change?
- # What are the existing sanitation-related attitudes, knowledge, and behaviors? What

- anal cleansing materials do families use? Are children encouraged or even allowed to use existing sanitation systems? What is done with infant fecal matter? Do adult women and men use the same sanitation facilities? How is animal fecal matter dealt with? Is sanitation considered a problem by the community?
- # What is the prevailing topography of the targeted peri-urban settlements? What are the soil and water table characteristics and uses? What is the population density of the community? Is it likely to increase in the future?
  - # What is the legal status of the targeted peri-urban communities? Is land tenure under dispute? Are the plots registered and recognized by the municipality? Is it illegal for urban utilities or other public institutions such as the Ministry of Health to provide services to these informal/illegal communities? Is there a genuine and sincere political commitment by the government to help families in informal/illegal settlements? Is there an active policy to withhold help from these communities or even to encourage abandonment of the settlements?
  - # What are realistic costs for a sanitation intervention? What are area household incomes? What is the nature of the income: irregular, seasonal, steady, informal sector jobs, or formal sector jobs? How much are the households currently spending on various services, such as sanitation and water? How much are families able to pay and how much are they willing to pay for a range of services?
  - # What is the social makeup of the households? What percentage of the community is made up of children? What percentage of the households is headed by single working mothers? What is the ratio of renters to homeowners?
  - # What is the economic nature of the peri-urban settlement? Is it primarily a residential area, or (more likely) is there significant informal small-scale productive activity in the settlement? What is the nature of these businesses? Do they produce more excreta (as in a restaurant) or waste of a different nature (as in a small-scale tannery or a butcher shop)?
  - # Which, if any, public institutions have the role and responsibility to provide sanitation services to the peri-urban communities? Are the institutional structure and capabilities of these public institutions appropriate for addressing the problem? Do the senior engineering personnel in these institutions have training and/or experience working in peri-urban areas, and are they open to innovative technical and social approaches to solving the problem? Does a social department exist? Does it employ qualified and experienced social scientists and community organizers? Does the social department have much decision-making power?
  - # What is the existing social and political structure of the peri-urban communities? Are there existing grassroots community organizations? Do they represent the community? Who are the leaders of the communities? Do the leaders represent the landowners, or do they represent the households living in the settlements? How are community decisions made? Are national political parties organizing potential voters in these communities and promising public services in return for votes?
  - # What are the existing health, environmental, design, and construction regulations and standards? Are these standards realistic given the country's conditions? Are they strictly enforced by the government? Does an external support agency need to follow these regulations? Will strict adherence to these standards automatically eliminate from consideration any technical options that are feasible for a peri-urban area?
  - # How is the existing financial sector organized? Is home improvement credit generally available to families living in peri-urban areas? Are there existing legal barriers

to providing credit to these families? Are the formal financial institutions likely to respond to incentives to provide families with access to credit? Are alternative credit institutions, such as NGOs or credit cooperatives, available?

- # Is the lack of adequate sanitation creating an environmental pollution problem for other areas, including the city as a whole and downstream communities?
- # What is the status of the private sector involvement? Can it supply supplies, materials, spare parts and services for the design, construction and maintenance?

### 5.3 Strategies

A comprehensive approach that recognizes the interrelationships between various societal

sectors is needed to increase the effectiveness of a peri-urban sanitation project. Projects should be able to depend on cooperation between and among community, municipal, regional, or national organizations and involve both the formal and informal sectors. Complementary projects in water supply, solid waste collection, drainage, and health education may be needed to ensure the effectiveness of sanitation projects. Furthermore, implementation of a sanitation solution may be a multistep process, starting with community education and then progressing to simple interventions to address the large problems, and finally becoming more complex as finances and institutional capabilities allow.

To promote a comprehensive approach, project design and implementation teams must be interdisciplinary and share a unified vision of the optimization of operations through joint social science and technological interventions. NGOs can also play an effective role because they are frequently close to the population, can organize illegal/informal peri-urban settlements, and can serve as intermediaries with formal legal institutions such as banks, municipalities, and utilities.

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## **ANNEX 1**

# **SANITATION INVENTORY SURVEY FORM**



7. What year did you begin to use your present sanitation facility? 19\_\_\_\_\_
8. Is there another sanitation facility in the process of construction? YES NO  
If so, which one? \_\_\_\_\_
9. How many people use the facility? \_\_\_\_\_
10. How happy are you with your present sanitation facility?  
very happy happy not happy
11. Who built your sanitation facility? \_\_\_\_\_ household  
\_\_\_\_\_ mason  
\_\_\_\_\_ contractor
12. Did you use a compressor? YES NO
13. How deep is the pit, if one is being used? \_\_\_\_\_ feet
14. How far is your PIT or SOAK AWAY from the edge of your lot? \_\_\_\_\_ feet
15. Has it been necessary for you to empty your facility? YES NO  
If yes, how was it emptied? \_\_\_\_\_
16. Is there vehicle access to your lot? YES NO
17. Have you visited one or more of the DRY TOILET MODELS? YES NO  
If so, what is your response to it? \_\_\_\_\_ liked but would not build one  
\_\_\_\_\_ liked and would build one  
\_\_\_\_\_ do not like  
\_\_\_\_\_ uncertain
18. How do you dispose of your garbage? \_\_\_\_\_ burned in yard  
\_\_\_\_\_ thrown into a pit  
\_\_\_\_\_ dumped in a field  
\_\_\_\_\_ thrown in a gully
19. Would you accept construction or building advice about putting in a new sanitation facility?  
YES NO

\_\_\_\_\_  
Signature of Lot Holder

\_\_\_\_\_  
Signature of Inventory Worker

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



## **ANNEX 2**

### **ISSUES IDENTIFIED BY THE PROGRAM DESIGN TEAM**



# Jamaica: Issues for Formative Research

Sources of Information:

1. Key informants/collaborating organizations
2. Focus Group discussions
3. Inventory (household survey)

ISSUE:           **Segments in the community**           SOURCE: 1

What are the major groups in the community that may need separate communications?  
Are there distinct groups divided by socioeconomic/educational levels? What groups and how should we define them? How large is each?  
Is there a major distinction by length of residence?  
By regular job vs. irregular work/unemployed?

ISSUE:           **Basic information on sanitation needs**           SOURCES: 1, 3

How many households in each community?  
How many persons per household?  
How many children per household?  
How do people currently meet their sanitation needs?  
Is there much variation among families by income? What?  
Is there much variation within families by age or sex? What?

ISSUE:           **Attitudes toward excreta**           SOURCE: 2

Is excreta or excreta disposal something that can be talked about in public? Why?  
What do people think about excreta?  
Do people differentiate between children's excreta and adults'?'  
Does it bother people to have excreta in their environment? Why?  
Do they believe that excreta is dirty? Do they believe it causes illness: To what degree do people believe in the scientific explanation of germs causing illness?  
Are people concerned about germs/excreta getting into drinking water? In the Bay? Why?  
What do people use to "wipe themselves"? Is this acceptable to people? Why? What would they prefer?

ISSUE:           **Attitudes toward basic sanitation**           SOURCES: 1, 2

What are people's main concerns?  
Is basic sanitation among them?  
How concerned are people about basic sanitation? Why?  
What are people now doing for their basic sanitation? Do men, women, and children all use the same places?  
How satisfied are people with their current sanitation solutions?

To what extent does every member of the household use them? Why?  
What have their experiences been with them? What have people liked/disliked?  
To the extent that people are dissatisfied, are they most concerned with CONVENIENCE, PRIVACY, DIRT IN THEIR ENVIRONMENT, DISEASE, BEING MODERN?

ISSUE:           **Sanitation solutions**                           SOURCE: 2

What type of sanitation solution is most acceptable to people? Why? What characteristics do satisfactory solutions need to meet?  
Is cost the main issue or are people willing to pay more for a solution that has certain characteristics? What characteristics?  
How much are they willing to pay? Do many families have debts? How much?

ISSUE:           **Handwashing**                                       SOURCE: 2

How often do mothers wash their hands? When? Where? Use any soap? Why do they wash their hands? Why don't they wash their hands more often? Do you think they should wash their hands more often?  
Same questions for fathers  
Same questions for babies  
Same questions for older children

ISSUE:           **Decision making within the family**                           SOURCE: 2

Who makes major family decisions that affect people's homes, property, investment of money? Who are the main influences on these decisions?  
How many families are headed by women? In these families, who makes and who influences major decisions?

ISSUE:           **Community organization**                           SOURCES: 1, 2, 3

What organized groups are there of community residents? Who participates? What have they done?  
How do people in the community get along? Are there any important issues/conflicts?  
Who are the community leaders?  
Who or what group speaks for the community?  
What schools do community children and adults attend?  
What churches? Who attends? How involved are churches in community issues?

ISSUE:           **Communication channels**                           SOURCES: 1, 2, 3

Besides from organized groups, how do people get information about things in the community?  
What communication channels have been used by government or NGO programs in the past, with what success, and why?  
How many people can read? Do they read regularly? What?

How many people listen to the radio regularly? What stations? What programs?

Have loudspeakers ever been used? With what results?

Are there any sports or entertainment personalities who are particularly popular in the communities?

**ISSUE: Values, outlook toward the future**      **SOURCES: 1, 2**

How optimistic/pessimistic are people toward the future? Do they feel their children's lot in life will be better or worse than theirs? Why? Do they think they can do much to affect this? What? How important a value is education?

How concerned are parents with their children's health? How fatalistic are parents? What do they feel they can do to promote better health? What are they doing? Immunization? ORT? What prevents them from doing more?

What are people's attitudes toward the main government and NGO groups that they have dealt with? How satisfied are they? Why? Do they trust them? Why?



## **ANNEX 3**

### **MATRIX OF ISSUES AND ACTIONS NEEDED**

**December 1994**

**WORKSHOP  
ON-SITE SANITATION SOLUTIONS PROGRAM  
IN  
ROSEMONT AND NORWOOD, MONTEGO BAY**

**DECEMBER 8, 1994**

**ISSUES INVOLVED**

The following is a compilation of issues that have arising in the design of the proposed program. While effort has been made to make the compilation as thorough as possible, participants are invited to bring any additional issues that may have been overlooked to the workshop for its consideration.

<b>TOPIC</b>	<b>ISSUE</b>	<b>PROBLEM</b>	<b>AUTHORITY</b>	<b>ACTION</b>
Land Sales	Selling Price  Covenants	* If the selling price exceeds that affordable by the below median income, sales are not eligible for HG liquidation. * Some lot holders may refuse to accept any sanitation solution. Are covenants to be considered restricting legal access to title until approved sanitation system is installed?	NHC and MOC(H)  OPM, MOC(H), MOH, and NRCA	* Provide total area of lots to be upgraded and final estimated construction costs to provide a unit cost. * Obtain directive from policy makers as to acceptability of such a covenant before sales commence.
Sanitation Acceptability	Sanitation standards	* Some of the solutions likely to be employed are at the edge or outside of current standards and regulations.	MOH(ECD), MOH, and NRCA	* Agree to a practical, appropriate, "common-sensical" approach to sanitation solutions with NGO.
On-Site Solutions	Site specificity	* Initial recommendation on appropriate solution is required on each site based upon existing solution, geology, finance and lot owner preference.	NGO	* Agree criteria for each variable to arrive at equitable solution.

<b>TOPIC</b>	<b>ISSUE</b>	<b>PROBLEM</b>	<b>AUTHORITY</b>	<b>ACTION</b>
On-Site Solutions (continued)	Approval of plans	* Once initial sanitation assessment is made, a plan indicating type of solution to be employed and construction of same will be prepared by the NGO. Who will approve the proposed solution? If existing solution is found as acceptable, who will approve it?	MOH(ECD)	* Agree mechanism with Public Health Inspectors and NGO for inspection and design approval procedures.
	Approval of construction	* Once constructed, who will approve the construction as safe for human use?	MOH(ECD)	* Agree mechanism with Public Health Inspectors and NGO for final inspection and approval.
Environmental Concerns	Definition of indicators	* The provision of sound sanitation should produce positive environmental effects. How are these to be measured?	NRCA, NWC, MPSE AND UWA	* Agree criteria on which the extent of environmental impact can be ascertained.
Health Concerns	Definition of indicators	* The provision of sound sanitation should produce positive health effects. How are these to be measured?	MOH	* Agree criteria on which the extent of environmental impact can be ascertained.
Finance	Cost of construction	* Construction costs of the various solutions are likely to be high on an individual basis. How can costs be lowered through the use of economies of scale?	MOC(H), NHC, NGO and private sector construction supply and transport companies	* Investigate the ability to enter into supply and transport contracts for the entire project.
	Availability of finance	* Sanitation finance will be linked to lot sales and mortgages. What will be the situation if there is too much or too little finance for an individual solution.	CHFC, Montego Bay financial institution and NGO	* Agree a methodology on under- or over-subscription of mortgage funds.
	Drawdown of finance	* How will funds be disbursed for the construction of sanitation solutions?	CHFC, Montego Bay financial institution and NGO	* Agree a methodology for the drawdown of mortgage funds for construction of solutions.
	Accounting of finance	* Who shall be responsible for the keeping of accounts of record? Should an additional set of accounts be kept as an audit trail?	CHFC, Montego Bay financial institution and NGO	* Agree accounting responsibilities and procedures.

